CYBERSECURITY INTERNSHIP TIPS

A Cybersecurity Internship is a great way to apply what you’ve learned at school, learn new skills, increase your hireability, all while earning a great wage.

STEPS TO TAKE

1. **Create a great resume and cover letter**
   - Build a robust resume- get involved in things outside of the classroom.
   - ENG 302 and the [WWU Career Services Center](https://www.wwu.edu/career) are great resources and can help you make a perfect resume
   - Make sure your documents are flawless and that you have multiple people edit them

2. **Look for positions**
   - Google or Indeed: “Cybersecurity Summer 2020 Internship”
   - Most positions open up between October-February

3. **Apply!**
   - You are extremely qualified for all Cybersecurity internships. You know more than you think you know!
   - The more internships you apply to, the better your chance of securing a position.
   - Tailor your application to each position, making sure to mention how you meet each of the qualifications they are looking for.

4. **Prepare for interviews**
   - WWU Career Services Center does mock interviews and has rooms you can Skype in
   - Prepare and practice for your interview. Companies are looking for someone who is positive, a team player, and a good communicator. Technical skills often come second to these things!

FINANCIAL INCENTIVES

Examples of what students have earned in their past internships:

- $36/hour + $8000 housing stipend- large cybersecurity company outside of Washington
- $24/hour + $4500 moving stipend- large company outside of Washington
- $28/hour + time-and-a-half for overtime- large company outside of Washington
- $22/hour + $2500 housing stipend + flight reimbursement- large company outside of Washington
- $20/hour + 401K + health benefit options - large company in Seattle
- $30/hour + full benefits- large company in Seattle
- $15/hour- + 401K + $1500 training stipend – medium company outside of Washington
- $12/hour- government internship in Olympia

THE NUMBERS

Here is an example of what one student experienced in their application process:

- 101 Applications submitted (most between January 1st and February 28th)
- 19 Rejections without interviews/contact
- 11 Interviews
- 5 Declined Interviews
- 3 Offers on February 26th

COMPANIES

The best way to find an internships is to Google “Cybersecurity Summer 2020 Internship” and your location parameters. Here is a list of companies that have hired Cybersecurity Interns in the past:

- Homeland Security Office of Intelligence and Analysis
- Premera
- Nordstrom
- Google
- Palo Alto Networks
- Boeing
- PACCAR
- Liberty Mutual
- Nike
- BAE Systems
- PEMCO
- MailChimp
- Stroz Freidberg (AON)
- FireEye
- Amtrak
- Raytheon
- Salesforce
- CrowdStrike
- Integrity Applications
- T-Mobile
- IBM
- Lockheed Martin
- Northrop Grumman
- Spectrum
- Sony
- Booz Allen Hamilton
- Burns & McDonnell
- Entergy
- Davis Wright Tremaine LLP
- Aetna
- American Family Insurance
- Biogen
- Seagate
- Sandia National Labs
- USAA
- Aruba Networks
- HPE
- Kaiser Permanente
- Citi
- UnitedHealth Group
- Walgreens
- Dell
- Mozilla
- Tesla
- ServiceNow
- JP Morgan Chase
- Costco
- Quicken Loans
- GulfStream
- CBS
- GE
- Arm
- Kiewit
- Ford
- Lionsgate Entertainment
- Facebook
- Twitter
- PayPal
- Emerson Automation Solutions
- Harland Clarke
- Leidos
- Symantec
- US Cellular
- Honeywell
- Shure
- ECS Federal
- Shutterfly
- Allstate
- FIS Global
- CenturyLink
- F5 Networks
- General Dynamic Mission Systems
- Cisco
- Intel
- Virgin Galactic
- McAfee
- Oracle
Internship with Premera Blue Cross (Summer 2019)

Who did you intern with?
Premera Blue Cross

What did you do for them as an intern?
I accepted a Software Developer internship.

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
I got professional experience working on a team in an Agile environment applying the tools and skills acquired in from this program like C# and SQL

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
I went to every career fair on campus and that is how I got this internship.
I also suggest applying to between 50-100 internships around the country and be willing to relocate for the summer.

Anything else you want to add?
Find something about the job you are passionate about and make sure to talk about that in the interview.

Internship with GDMS (Summer/Fall 2019)

Who did you intern with?
I interned with GDMS (General Dynamics Mission Systems) in NWS (Nuclear Weapons Security) on the ISD (Integrated Systems Design) team.

What did you do for them as an intern?
So, funny story.... I can't actually talk about it... But it is a lot of fun! And I am applying a lot of what I have learned in class on this team. But other than that I can't say anything.

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
Tons of experience both on the technical side and communicative side. I have learned a lot about the process to get things approved, documentation, classifications, and etc. The security clearance and knowledge that I gained from this position will for sure help with future jobs. I am currently halfway through my internship so the talk of future job offers have not happened yet. That will take place the last week of my internship.

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
I applied to 130 different internships, the spray and pray method haha. I would give the advice to apply to as many as you can and to not take rejection personally. Also be aware that some places may say they will get back to you, however they do not. Keep in contact and ask for updates from the interviewers/HR (whoever you talk to for the process). Go to conferences! I got my first contact with this company at a conference. And be confident about what you do and don’t know in an interview. There is nothing wrong with saying you do not know something, but give them an idea of what you would do to show your through process and that you are a problem solver. That way they know if you do not know something you are capable of figuring it out on your own without someone walking you through step by step.

Anything else you want to add?
Apply to the GDMS internship! They have locations all over the country, you don't have to actually move to Massachusetts. And since it is a giant company there are many programs you can apply to.
Internship with SPIE (Jan-June 2019) & Premera (Summer 2019)

Who did you intern with?
SPIE (January-June 2019) and Premera (Summer 2019)

What did you do for them as an intern?
SPIE- pure helpdesk
Premera- At Premera there are two Cybersecurity internship areas: 1.) Cyber Incident Response Team (deals with active threats) and 2.) Identity Access Management (running and maintaining tools, dealing with single sign-ons and multi-factor identification, certificate/key infrastructure). Interns focus on one area, but also get to try out other areas (CIRT, IAM, Platform Security, Risk).

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
I learned A LOT. Now that my Premera internship is over, I still work for them remotely 20 hours/week. Premera wants to hire out of their internship pool. Premera’s base pay for cybersecurity engineer is $75,000.

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
• Get involved in things before your internship. At WCC, I volunteered at the Student Help Desk for a year, then I was a lab assistant, then I filled in for my supervisor. BE INVOLVED- separate yourself from everybody. Make yourself stand out. Get a job at WWU. Build up your resume.
• You don’t have to have the most technical experience. A lot of what a company is looking for is personality fit and positive attitude. Placement for both internships and higher-level positions is based on fit more than skill. They’re willing to train someone who fits on the team, and are looking for someone who is teachable as well as knowledgeable.
• Having a robust LinkedIn is extremely important. Recruiters will look at your profile. General IT experience is very useful, as is having any general work experience.
• SANS courses (sans.org) are a great way to build up your resume.
• Apply to internships that you don’t feel qualified. I originally thought, “I’m not qualified enough for these internships”, and I was totally wrong. Our students are qualified for that internship- extremely qualified. You are 100% qualified to apply for internship positions that you don’t think you’re qualified for. You are way more prepared than you know, but you need to be prepared to learn. Be confident- be prepared to learn.
• Most interviews started with a recruiter or HR and they asked general questions. Then you move onto an interview with the technical team. The technical questions I was asked in the interviews were about things that I learned during my time at Whatcom Community College. So make sure you highlight the experience you have from WCC; point out that you have a AAS-T in Cybersecurity.
• No one really looks at your grades.
• You have to be willing to relocate.
• The internships might not be on your schedule (the start or end date might conflict with school), but still apply because you might be able to figure out a schedule adjustment if you’re offered the position.
• Work/life balance at Premera is really good. Most everybody works from home on Fridays and employees are only expected to work 40 hours/week.
• If you like programming, don’t be shy about applying for Developer internships.

Anything else you want to add?
• I was originally disappointed when I took CISS 346 because I thought we would be doing more software development in that class, but it was instead very business-focused. However, it turns out that that class was VERY useful and completely prepared me for the work that I did at Premera.
• School really prepares you for work, but you learn SO much at work/an internship.
Internship with PACCAR (Summer 2019)

Who did you intern with?
- Paccar

What did you do for them as an intern?
- I worked on their Security Operations Team, working on both ongoing projects, and day to day operations. Some specific applications I worked with was IT ticketing systems, Firewalls, Proxy, Certificate Authority, SOC, SOAR, Honeypots, Log Collectors, etc.

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
- I think that the biggest benefit I got out of this internship was the experience of working in the field and learning some possible outlooks for jobs once I graduate. I gained many contacts and references that I will utilize while applying to jobs this year.

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
- I think that one of the best resources that I used was my English 302 class. One of the modules in the class was dedicated to cover letters and resumes, and we had to pick a job posting to base our resume and cover letter on. I based mine on the Paccar internship that you sent us, and decided after finishing the module to apply. I didn’t think that I would get the internship, but I thought the interview was practice for me. So I stayed calm during my interview, and was able to learn what employers typically looked for during interviews. Then I was ecstatic when they offered me the job soon after the phone interview. The biggest thing to explain during an interview is why you chose this field and how you keep current with current events. Also a big thing that employers look for are things you do outside of school, to show that you are interested in what you are doing. I set up a raspberry pi on my home networks, and that was one of my main selling points during my interview.

Anything else you want to add?
- I would recommend to start thinking about what kind of company the students want to work for, and what work environment would suit their needs the best. Start thinking about how far away you would want to move, etc. Another reminder to stay calm during an interview, and pay attention to what questions employers are asking.
Internship with Dude Solutions (Summer 2019)

Who did you intern with?
Dude Solutions

What did you do for them as an intern?
I worked directly under the CISO and worked on asset and user permission audits. Also a touch of IT work when the help desk was understaffed.

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
- Entire product purchasing process as I started an initiative to purchase a phishing campaign tool.
- Experience with Tenable, Active Directory, Group Policy, DDPS (Dell Data Protection Suite), Python and Powershell in a live environment.
- Offered to stay on part time during the school year along with budget for continuing education.

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
The key to getting this internship was developing connections preemptively, without the pretext of looking for a job, by asking for informational interviews. That enabled me to make relationships, show off my experience and place a face to a name, which helps immensely when submitting a resume.

Anything else you want to add?
Take a risk and get outside of your comfort zone.
Internship with CenturyLink (Summer 2019)

I interned with CenturyLink in Broomfield, CO

As an intern I was under the Global Security Organization as a part of the Governance and Risk team. What our team did was we would do Security Risk Assessments (SRA) for any CenturyLink new or changing products, projects or services. An SRA begins as a form that an internal user will fill out to give us information about their project and then we would meet with them to discuss the specifics like what kinds of security controls they had implemented, what kinds of data will be accessed or processed be performed, how will the data be accessed or changed, and who will be accessing the data or working with it. We were primarily concerned with International work and had specific controls we would have to place on those projects, like requiring them to work from a clean room, which is a room with certain security controls on it. I worked mostly on SRA’s in the last half of my internship and completed I think 15 of them. I also built an excel macro for them which would connect to a database and pull information and format it all into a spreadsheet based on what applications a particular SRA was using. I worked on this in my first couple of weeks and it really improved the process of completing SRA’s, my boss said it probably saved 10-15 hours of work a week.

From this internship I felt I really got a lot of practical experience working in an office and a large corporation. I learned that I really didn’t want to do this kind of work for the rest of my career because a lot of it was reading long documents that detailed specifics of projects and it was very tedious and boring. Also I felt that the job wasn’t really too big of a challenge for me since I have always considered myself pretty decent at technical writing. I also learned that I didn’t want to work in a very large corporation since processes move so slowly and I like working in a more impulsive manner, where if I see something that needs to change I can just formalize my ideas and then change it quickly. However I do feel like I got a lot out of interacting with so many different departments within the organization because I had to learn how to navigate the hierarchical structure of CenturyLink and juggle a lot of tasks at the same time. So I really felt like I learned how to manage my time and workflow a lot better thanks to this internship and also how to work with a strict time crunch and people escalating issues with me. I was also able to get a job offer from CenturyLink for after I graduate which is nice to have but I don’t think I would like to work there.

For the job offer I received from them I got offered $63,500 a year with medical benefits and all that, I would also receive a moving stipend if I moved out to Colorado and I would also get a minimum of $5 raise every year I worked there. Pretty good offer but the average in Denver for entry level Cybersecurity jobs is around $81k and in Seattle its $91k so I felt pretty low-balled. My team, including my boss, basically told me I should accept the offer but then use it to leverage a better offer cause I was worth way more than CenturyLink could pay me, which made me feel nice, and it was nice that they were so honest about the job.

When I was searching for internships I was looking with John, Scarlette and Josh and I know that each of us applied to probably 100 internships each. I’d say that its really helpful to have other people applying to internships with you because you can all apply to the same ones and look over each other resumes and cover letters and it kind of makes it competitive to see who can get the best internship which made it fun. Also taking ENG 302 Technical Writing is high advised as that will make your resume perfect, we all copied Josh's format, who had already taken it. I got maybe 13 interviews and it was very useful to me to go to the career services center and do mock interviews, they really help a lot with nailing down the format of your answers and what you’re doing right and wrong. I would also say that expect the first 4 or 5 interviews to go really bad as you’ll be very nervous and it can be awkward if you’re doing it over skype or some other view conferencing software. After those first 5 or so it becomes really easy and interviews go smoothly.

For my interview with CenturyLink it was a skype interview and I didn't really prepare too much, I think it doesn't really help to prepare more than once or you just sound canned. I only did one interview and it was with people who would be in my team and I actually got to talk with them once I was hired and they told me some things I did really well in the interview. They said I was very eager and knowledgeable and also it was big plus that I shared my web cam on skype, cause they weren’t planning on it but then since I was they did too and it made it feel more personal to talk to and made me seem confident. I actually found their notes on the interviews so I'm going to paste that here.

One thing that my team member said that instantly disqualified a lot of candidates was that they would ask if there was an opportunity to get hired after their internship, he said he got asked this in every interview except mine. He said that this makes it feel like you aren't really interested in the internship or the people interviewing you and just want to get a job.
Internship with IBM (Summer 2019)

Who did you intern with?
IBM with the CISO SOC department in Austin, TX.
My department was focused on creating solutions to serve the SOC and enhance their ability to monitor IBM's internal network.

What did you do for them as an intern?
I worked with 3 other interns. The main project goal was to find how to monitor containers for security purposes. We used Kubernetes, osquery, IBMcloud, Sysdig Falco, Elastic, Kibana, Fluentd, and Logstash. We researched open-source tools and a proprietary tool to see if they would serve our purpose. A lot of the time was spent researching and customizing tools to fit our specific needs.
It was nice because we were given a project that had a real need for the organization.

What did you get out of this internship? (specific skills, experiences, future job offers, etc.)
- I was introduced to Kubernetes and a lot of devops tools. We used github often as well.
- We used the Agile model.
- Our team wrote a white paper and I was able to publish an article from that.
- Spent time doing team and individual work.
- IBM sent us to Disneyland and had us take part in a 2 day hackathon. You get to interact with interns from other departments as well.
- I met a lot of people in my department and at employee events who were able to give good advice.
- They intended to make an offer, but it seems like they are at max headcount for the next hiring cycle. So I'm just waiting to see if anything changes. The manager who oversaw my work and who hired me departed IBM the month before I left, so it left my status in a bit of a weird situation.
- Free training from IBM's internal courses (it got slower when then other interns left 5 weeks before me).

What did you do to get this internship?/What advice would you give to one of our students who is looking for a Cybersecurity internship?
- Apply everywhere in the US. I used Indeed for the most part to find internships.
- Don't have your heart set on one internship, just apply to everything, even if you don't feel that qualified.
- Write a good resume. Have a cover letter if available and just make it generic enough to change the company and job title.
- Do a practice interview at the career center and have them look at your resume as well. Also go to the career center and request a room if you need a private space to do interviews.
- Take Technical writing with Rachel Sarkar.
- Apply directly on the company site even if it is quicker on LinkedIn or Indeed. I don't know if this really matters, but it seemed like it did.
- Create a sheet that lists all your skills and technologies mentioned on the resume and write a few sentences on each one to make sure you know what to talk about if an interviewer asks. Also start looking into common interview behavioral questions.
- A big one was knowing how to answer questions with the STAR (situation, task, action, result) method or anything similar.
- Some people only sent out a handful of applications and got an internship while others applied to 50-100 places and found one. So, it just depends on a person's luck. I think if someone applies to nearly a 100 places with a well-made resume they should have a strong chance at getting multiple interviews for internships.
- It is helpful to track on a document what company and what position you applied for, and what day that was done on. Then whenever you received any news such as a rejection, pre-interview questions request, day you interviewed, or anything worthy to note, you should then go and write a note and the date next to the job. This was helpful for me because I applied to so many places and sometimes to the same company, on different days, and for different positions and locations. It makes it easier to know whether you should follow up in case the interviewer didn't get back to you in the time frame mentioned.
Internship with IBM, continued

INTERVIEW TIPS
- Most times I would do a HR interview and then interview with the IT manager. The HR interview was 15-20 minutes and they asked behavioral and generic questions, nothing technical. They're just looking to see that you can present yourself properly. Then they'll either schedule a 2nd interview right after or email you later. The 2nd interview is with the head of the security department. The interview usually consisted of 2 people, but sometimes up to 5. They usually lasted 30-60 minutes.
- Be ready to talk about EVERY skill listed on your resume

VERY COMMON INTERVIEW QUESTIONS
- What do you know about our company?
- Tells us more about yourself. (Tip: Talk about yourself and then return back to why you applied for the internship)
- How did you deal with a team member that you did not get along with?

OTHER EXAMPLES OF INTERVIEW QUESTIONS
- How do you keep up on security news?
- What is a new technology that interests you?
- Why did you get into Cybersecurity?
- What areas of Cybersecurity interest you?
- Where do you want to work in Cybersecurity?
- Where do you see your career 5 years from now?
- What specific tasks do you want to be doing on the job?
- Are you fluent in Kali?
- What do you know about virtualization?
- Can you give me some examples of IDS/IPS systems that you have used?
- Do you know how to use WireShark?
- What experience do you have with network security?
- What have you done for Windows hardening?
- Why do you want to work here?
- What kind of engineering program do you have in your course?
- What are your strengths? What are your weaknesses?
- What is a skill you want to improve on (or personal trait)?
- If you enter a url into google and it doesn’t work, what is your first thought on the problem?
- Why don’t you have your CCNA with your experience listed? Are you planning on getting your CCNA?
- What does your home network look like?
- Anything else you want to tell us about you?
- Why hire you compared to someone else?
- What are your interests?
- What type of scripting do you do?
- What is a DMZ for?
- Do you have AWS experience?
- What security precautions do you take?
- Do you have experience drawing diagrams?
- How do you deal with a project if it is not working?
- Talk about how your current and past courses make you a good fit for the internship.
- Tell us about a time where you took leadership in a project
- How do you build trust with someone?
- Tell us about a time when you had to narrow down a problem with no criteria and that had multiple solutions?
CISS 247 (Computer Systems I)
Overview of basic computer organization and design. Intro to C programming. Topics covered include data representation, boolean algebra, machine learning, instruction sets, processor architecture, multi-processors, system-level I/O, pipelining, and the memory hierarchy.

CISS 301 (Formal Language and Functional Programming)
Introduction to discrete structures important to CS, including sets, trees, functions, and relations. Proof Techniques. Introduction to the formal language classes and their machine, including regular languages and finite automata, context free languages and pushdown automata. Turing machines and computability will be introduced. Programming using a functional language.

CISS 360 (Operating Systems Concepts)
Study of the principle and techniques employed in modern computer operating systems. The emphasis is on process and thread creation, management and scheduling, systems calls; memory management, virtual memory, and paging; file system implementation, input/output systems, and device management.

CISS 340 (Database Concepts)
Design, implementation, and use of databases. Learn to analyze and model dat and data usage to create an efficient, normalized, to implement a database in relational database management system (RDBMS), and to manipulate the data and data format using SQL. Study security implications and database access techniques.

CISS 346 (Secure Software Development)
Techniques, methodologies and processes for development of robust, secure software. Security development process, threat modeling, common software vulnerabilities, web site vulnerabilities, defensive coding practices, security testing.

CISS 461 (Computer Security)
Overview of computer security and detailed study of theoretical foundations and practical implementations of some aspects of security, including policy specification, the role of cryptography, policy implementation and assurance, security threats and counter-measures.